

## CLAIMS

1. A pulse height analyser for determination of the pulse height distribution of electronic pulses comprising  
a set of comparators with a common input for analogue to digital conversion of the  
5 electronic pulses,  
a set of latches wherein the inputs of the latches are connected to the outputs of  
respective comparators for recording passage of the corresponding threshold voltages  
by the rising edge of a pulse,  
a priority encoder connected to the latch outputs for determination of a pulse height  
10 category consisting of pulses with a pulse height within a pulse height interval defined  
by respective threshold voltages, and  
a micro controller that is adapted to count the number of pulses within each pulse  
height category.
- 15 2. A pulse height analyser according to claim 1, wherein the thresholds of the  
comparators are non-equidistant.
3. A pulse height analyser according to claim 1, further comprising a filter for filtering  
the electronic pulses providing a substantially constant delay from pulse start to  
maximum pulse amplitude of the filtered pulse, and for provision of the filtered pulses to  
the common input of the comparators.
- 20 4. A pulse height analyser according to claim 1, further comprising a filter for filtering  
the electronic pulses providing an output signal containing the filtered pulses with a  
DC-value substantially equal to zero.
5. A pulse height analyser according to any of the preceding claims, further comprising  
a current source, preferably a constant current source, for connection to electrodes  
25 contacting an electrolyte in two chambers mutually connected by an orifice for Coulter  
counting of particles, and wherein the thresholds of the comparators are dependent on  
the actual value of the generated electrode current whereby possible variations of the  
electrode current are substantially cancelled by corresponding variations of the  
thresholds.
- 30 6. A pulse height analyser according to any of the preceding claims, further comprising  
a plurality of sets of comparators for pulse height determination of input pulses of  
different amplification.

7. A pulse height analyser according to any of the preceding claims, further comprising circuitry for resetting the latches a predetermined time period after start of a pulse, the time period being independent of the pulse height and the pulse width.
8. An integrated circuit comprising a pulse height analyser according to claim 1.
- 5 9. A field programmable gate array comprising a pulse height analyser according to claim 1.
10. An application specific integrated circuit comprising a pulse height analyser according to claim 1.